Please to a plus sign (+) inside this box

Sheet

PTO/SB/08A (10-96)

Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

of

Complete if Known					
Application Number	09/649,569				
Filing Date	AUGUST 28, 2000				
First Named Inventor	PATEL et AFCFIVED				
Group Art Unit	1746				
Examiner Name	Unknown AN 1 0 2001				
Attorney Docket Number	PO6-US				

						16_1700
				U.S. PATENT DOCU	IMENTS	
Examiner Cite		U.S. Patent I		Name of Patentee or Applicant	Date of Publication of	Pages, Columns, Lines, Where Relevant
nitials*	No.1	Number	Kind Code ²	of Cited Document	Cited Document MM-DD-YYYY	Passages or Relevant Figures Appear
Lo	CA	4,740,410		Muller et al	04-26-1988	
, ,	СВ	4,789,426		Pipkin, M.A.	12-06-1988	
	00	5,330,301		Brancher, C.D.	07-19-1994	
I	CD	5,672,242		Jen, J.	09-30-1997	
	CE	5,753,073		Jen, J.	05-19-1998	
	CF	5,835,256		Huibers, A.	11-10-1998	
feet	CG	6,051,503		Bhardwaj, J. K.	04-18-2000	
1						
	/					
			/			
						
				-		

				FOR	EIGN PATENT DOCUMENTS	S		
Evaminas Cita			Foreign Patent Docu	ment	Name of Patentee or	Date of Publication of	Pages, Columns, Lines,	
Examine Initials	No.1	Kind Code ⁵		Applicant of Cited Document	Cited Description Where Relevant		T ⁶	
Acer	DA	wo	98/05605		Bhardwaj, J. K.	02-12-1998		
	DB	wo	98/13856		Bhardwaj et al.	04-02-1998		
	DC	wo	99/01887		Lea et al.	01-14-1999		
	DD	wo	99/03313		Lea et al.	01-21-1999		
	DE	wo	99/49506		McQuarrie, A. D.	09-30-1999		
	DF	wo	00/52740		Bhardwaj et al.	08-08-2000		
	DG	EP	0 822 582 A2		Bhardwaj, J. K.	02-04-1998	<u>-</u>	
	DH	EP	0 822 584 A2		Bhardwaj, J. K.	04-04-1998		\Box
- {	DI	EP	0 838 839 A2		Bhardwai, J. K.	04-29-1998		\Box
Aus	Ŋ	EP	0 878 824 A2		McQuarrie et al.	11-18-1998		T^{-}

Examiner Signature Date Considered / 1/1/02						
Signature Considered 12//1/02	Examiner			Date		
	Signature	#///	Con		· · // —	102

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Please type a plus sign (+) inside this box

1 × 2/2

PTC/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet of 2 2

Co	mplete if Know	ın 📑
Application Number	09/649,569	
Filing Date	AUGUST 28, 2	000
First Named Inventor	PATEL et al.	MECEIVER
Group Art Unit	1746	IAL TO SO
Examiner Name	Unknown	DAN 1 D 200
Attorney Docket Number	P06-US	7001

		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Initials	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
Arro	EA	STRELLER et al., "Selectivity in Dry Etching of Si(100) and XeF2 and VUV Light", Elsevier Science B.V., Applied Surface Science, (1996), 106: pp. 341-346	
	EB	VUGTS et al., "Si/XeF2 Etching: Temperature Dependence", J. Vac. Sci. Technol. A 14(5), (Sep/Oct 1996), pp. 2766-2774	
	EC	WANG et al., "Gas-Phase Silicon Etching with Bromine Trifluoride", Transducers '97, 1997 International Conference on Solid-State Sensors and Actuators, Chicago (June 16-19), pp. 1505-1508	
	ED	WINTERS, H.F., * Etch Products from the Reaction of XeF2 with SiO2, SiO3, Si3N4, SiC, and Si in the Presence of Ion Bombardment*, J. Vac. Science Technology B 1(4), (Oct-Dec 1983), pp. 927-931	
	EE	WINTERS et al., "The Etching of Silicon with XeF2 Vapor", Appl. Phys. Lett. 34(1), January 1, 1979, pp. 70-73.	
	EF	GILDEMEISTER, J.M., "Xenon Difluoride Etching System", (Nov 17, 1997)	
	EG	"Xenon Difluoride Isotropic Etch System", Seeing is Believing, Surface Technology Systems Ltd. brochure, Newport, UK (date unknown)	
Act	EH	Assorted promotional literature, Surface Technology Systems Ltd., Newport, UK (July 28, 1999)	

Examiner Date Considered Signature

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.



PTC/SB/08A (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Complete if Known Substitute for form 1449A/PTO **Application Number** 09/649,569 INFORMATION DISCLOSURE AUGUST 28, 2000 Filing Date STATEMENT BY APPLICANT First Named Inventor PATEL et al. Group Art Unit 1746 (use as many sheets as necessary) **Examiner Name** Unknown Sheet of Attorney Docket Number P06-US

				U.S. PATENT DOCU	MENTS	
Examiner Initials*	Cite No.1		ocument Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
Aw	AA	4,190,448		Winters	02-26-1980	
	AB	4,310,380		Flamm et al	12-12-1982	
	AC	4,498,953		Cook et al.	02-12-1985	CIPE
Aud	AD	5,726,480		Pister	03-10-1998	/0
						NOV 2 9 2000
						1
			f			A TRADELL
						日日召
			-			<u> </u>
						2 2 2
		-				
						0

			· - -	FOR	EIGN PATENT DOCUMENT	S		
Examiner Initials*	Cite No.1	Office ³	Foreign Patent Docu Number ⁴	Ment Kind Code ⁵ (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6
Aw	AE	wo	98/32163		Calif Institute of Technology	07-23-1998		$oxed{\Gamma}$
				\forall			 	╁
			*					1
								╁
		-	V.c	•				_

Examiner Signature Date Considered 12/12/02

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Please type a plus sign (+) inside this box -

Sheet

Complete if Known

09/649,569

Under the Paperwork Reduction Act of 1995, no persons are

2

PTO/SB/08B (10-96) Approved for use through 10/31/99. OMB 0651-0031 itent and Trademark Office: U.S. DEPARTMENT OF COMMERCE tion of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO			
INFORMATION D	SENGILLO USI	Applica	ion Number
	13CLC3UNL	ming D	ate
CTATEMENT DV	ADDI ICANT	First Na	med Invento

2

of

g Date **AUGUST 28** Named Inventor PATEL et al. 1746 **Group Art Unit Examiner Name** Unknown (use as many sheets as necessary) Attorney Docket Number

P06-US

		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²				
feo	ВА	ALIEV et al., "Development of Si(100) Surface Roughness at the Initial Stage of Etching in F2 and XeF2 Gases Ellipsometric Study", Surface Science 442 (1999), pp. 206-214.					
	вв	HABUKA et al., "Dominant Overall Chemical Reaction in a Chlorine Trifluonde-Silicon-Nitrogen System at Atmospheric Pressure", Japan Journal of Applied Physics Vol 38 (1999), pp. 6466-6469.					
	вс	HECHT et al., "A Novel X-ray Photoelectron Spectroscopy Study of the Al/SiO2 Interface", J. Appl. Phys. 57 (1: 15 June 1985, pp. 5256-5261.					
	BD	HOULE, F.A., "Dynamics of SiF4 Desorption During Etching of Silicon by XeF2", IBM Almaden Research Center, 15 April 1987, pp. 1866-1872.					
	BE	FLAMM et al., "XeF2 and F-Atom Reactions with Si: Their Significance for Plasma Etching", Solid State Technol. 26, 117 (1983).					
	BF	IBBOTSON et al., "Plasmaless Dry Etching of Silicon with Fluorine-containing Compounds", Journal of Applied Physics, vol. 56, no. 10, Nov. 1984, pp. 2939-2942.					
	ВG	IBBOTSON et al., "Comparison of XeF2 and F-atom Reactions with Si and Si02", Applied Physics Letter, vol. 44, 1129 (1984).					
	ВН	WINTERS et al., "The Etching of Silicon with XeF2 Vapor", Applied Physics Letters, vol. 34, no. 1, 1979 pp. 70-73.	1				
	ВІ	XACTIX, Inc., Marketing Brochure, June 27, 1999	17.7				
Aro	вл	WANG et al., "Gas-Phase Silicon Etching with Bromine Trifluoride", TRANSDUCERS '97, International Conference on Solid-State Sensor and Actuators, Chicago, June 16-19, 1997, pp. 1505-1508.					

Signature	a Ola	Date Considered	11/12/02

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.



Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB

control number.

Complete if Known Substitute for form 1449A/PTO 09/649,569 **Application Number** INFORMATION DISCLOSURE **AUGUST 28, 2000** Filing Date STATEMENT BY APPLICANT **First Named Inventor** PATEL et al. 1746 Art Unit (use as many sheets as necessary) PURNELL. A. Examiner Name Sheet 1 of Attorney Docket Number **P06-US**

			U.S. PATI	ENT DOCUMENTS	
Examiner Initials		Document Number Number - Kind Code ² (if known	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
حس	FA	US- 3,511,727	- 05-12-1970	Hays, R.G.	
- / 1	FB	US- 4,695,700	. 09-22-1987	Provence et al.	
	FC	US- 4,749,440	06-07-1988	Blackwood et al.	
1	FD	US- 5,206,471	04-27-1993	Smith, D.K.	
	FE	US. 5,439,553	08-08-1995	Grant et al.	
	FF	US- 5,534,107	07-09-1996	Gray et al.	
	FG	US- 5,716,495	02-10-1998	Butterbaugh et al.	
	FH	US. 5,726,480	03-10-1998	Pister, K.S.	
	FI	US- 5,757,456	05-26-1998	Yamazaki et al.	
	FJ	US- 5,858,065	01-12-1999	Li et al.	
	FK	US- 6,022,456	02-08-2000	Manning, T.J.	
	FL	US- 6,162,367	12-19-2000	Tai et al.	
	FM	US- 6,277,173 B1	08-21-2001	Sadakata et al.	
	FN	US- 6,290,864 B1	09-18-2001	Patel et al.	
	FO	US- 6,328,801 B1	12-11-2001	Gary et al.	
	FP	US- 6,334,928 B1	01-01-2002	Sekine et al.	
	FQ	US- 6,355,181 B1	03-12-2002	McQuarrie, A.D.	
	FR	US- 2001/0002663 A1	06-07-2001	Tai et al.	
	FS	US. 2002/0033229 A1	03-21-2002	Lebouitz et al.	
<i>r</i> —		US-			ļ

FOREIGN PATENT DOCUMENTS								
Examiner Initiats	Cite No.1	Foreign Patent Document Country Code 3 - Number 4 - Kind Code 5 (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Т6		
two	GA	EP-0704884-A2	04-03-1996	Mehta, J.				
	GB	EP-0878824-A2 DUPLICATE	11-18-1998	McQuarrie et al.				
	GC	EP-0878824-A3	01-19-2000	McQuarrie et al.				
	GD	EP-0955668-A2	11-10-1999	Yao et al.				
	GE	JP-1982/57098679-A	06-18-1982	Tsunetoshi, A				
	GF	JP-1983/58130529-A	08-04-1983	Yoshihiro et al.		l		
	GG	JP-1985/60057938-A	04-03-1985	Katsumi et al.				
	GH	JP-1986/61053732-A	03-17-1986	Arata et al.				
	GI	JP-1986/61134019-A	06-21-1986	Shinji et al.				
Aveo	GJ	JP-1986/61181131-A	08-13-1986	Shinji et al.				

Examiner Date Signature

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English to service Translation in attached. English language Translation is attached.

NOV 0 1 2002 PADEME.

Approved for use through 10/31/2002. OMB 05N-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a value MB

Substitute for form 1449A/PTO				Co	0	
				Application Number	09/649.569	
INFO	RMATIO	N DI	SCLOSURE	Filing Date	AUGUST 28, 2000	
STATEMENT BY APPLICANT				First Named Inventor	PATEL et al.	
				Art Unit	1748 1763	_
(use as many sh	eets as	necessary)	Examiner Name	PURNELL. A.	
Sheet	2	of	3	Attorney Docket Number	P06-US	

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No. 1 Number - Kind Code ² (if known	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear		
	US-					
	US-					
	De:					
	US-					
	US-			•		
	US-					
	US-					
	US-		-			
	US-					
	US-					
	US-					
	US-					
	US-					
	US-					
	US-					
	US-	·····				
	US-					
	US-	······································				
	US-					
	US-	····		<u> </u>		

		FORE	IGN PATENT D	OCUMENTS		
Examiner Initials	Cite No.1	Foreign Patent Document Country Code 3 - Number 4 - Kind Code 5 (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6
dev	GK	JP-1986/61187238-A	08-20-1986	Nobuo et al.		
7	GL	JP-1986/61270830-A	12-01-1986	Toru, T.		İ
	GM	JP-1987/62071217-A	04-01-1987	Toru et al.		
	GN	JP-1988/63155713-A	06-28-1988	Tadashi, F.		
	GO	JP-1989/01208834-A	08-22-1989	Nobuo et al.		
	GP	JP-1989/01217921-A	08-31-1989	Tsuneo et al.		1
	GQ	JP-1990/02250323-A	10-08-1990	Susumu et al.		
	GR	JP-1991/03012921-A	01-21-1991	Nobuo et al.		
	GS	JP-1992/04096222-A	03-27-1992	Atsuyuki, A.		
ho	GT	JP-1995/07029823-A	01-31-1995	Hiroshi, T.		

Examiner Date 02 Signature Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in

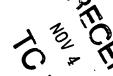
EAAMINER: Initial preference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

NOV 0 1 2002

RADEN



Approved for use through 10/31/2002. OMB 0551-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE AUGUST 28, 2000 Filing Date STATEMENT BY APPLICANT First Named Inventor PATEL et al. 4740 Art Unit (use as many sheets as necessary) **PURNELL Examiner Name** Sheet of Attorney Docket Number **P06-US**

U.S. PATENT DOCUMENTS						
Examiner nitials		Document Number Number - Kind Code ² (if known	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
		US-				
		US-		·		
		US-				
	<u> </u>	DS				
		US-				
	ļ	US-				
	ļ	US-				
		US-				
	<u> </u>	US-				
	ļ	US-				
	ļ	US-				
	·	US-				
·	-	US-	·			
		US-				
	-	US-				
······································	.	US-				
······································	-	US-				
	-	US-		•		
	·	US-				

		FORE	IGN PATENT D	OCUMENTS		
Examiner Initials	Cite No.1	Foreign Patent Document Country Code 3 - Number 4 - Kind Code 5 (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
Shoo	Gυ	JP-1997/09251981-A	09-22-1997	Kazuaki et al.		
Zno	G۷	JP-1998/10313128-A	11-24-1998	Hanmin et al.		
AND	GW	JP-1998/10317169-A	12-02-1998	McQuarrie et al.		
-						

Examiner Date σ2 Signature Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique ditation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.